Ceptor Animal Health News

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Serving Ontario through veterinary science, technology transfer, outbreak investigation and animal health surveillance

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Ministry of Agriculture and Food | Ministère de l'Agriculture et de l'Alimentation

Ministry of Rural Affairs | Ministère des Affaires rurales

Ontario

Neil Anderson.... on the move.....

At the end of January, Dr. Neil Anderson moved on from his extension position with the Ontario Ministry of Agriculture and Food to spend more time with his airplanes and family. Many of us have worked with Neil on cases, attended talks or workshops with him or read articles and info sheets he has authored. His positive contributions to the health and welfare of cattle and small ruminants in Ontario and around the world are well known. Neil pioneered the initial Livestock Medicines Manual and courses which were widely attended in Ontario and copied in a variety of other jurisdictions. His research into stall and barn design focused on cow comfort and lifetime productivity and is recognized internationally. Neil developed feedings systems for milk-fed calves that redefined optimal health and welfare for dairy and veal calves. Neil has a remarkable talent for discovering problems "right under our noses" and finding solutions through on-farm research projects and case studies. Neil has always been in demand by veterinarians and producers around the world who strive to improve the lives and conditions of food animals. Neil can be contacted at nganderson@gmail.com .

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Herd Health Visits Part 1

Tim Blackwell, Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON
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Disease investigation farm calls in food animal practice occur in two broad categories; those to address individual animal problems and those to address herd health problems. Health problems involving multiple animals on a farm may result from the introduction of a novel infectious agent to the farm. In other cases the disease outbreak may be caused to a significant degree by farm management that leads to exacerbation of an infection already endemic on the farm. The underlying cause for the health problems in the herd or flock determines the veterinarian's approach to resolving the issue. Disease in a herd or flock resulting from the unavoidable introduction of a novel infectious agent does not reflect negatively on the husbandry practices of the farm. In such cases the owner desires a rapid diagnosis and effective remediation. However when the health problem is, at least in part, management related, a very different approach is required to achieve a successful resolution.

Management-related herd health problems can be problematic if handled in the same manner as

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novel pathogen, infectious disease outbreaks. Rapidly making an accurate diagnosis and suggesting effective management changes can create significant discord with the herdsperson.

Where management practices contribute to herd health problems, quickly identifying the problem and solution, no matter how technically correct can create an uncomfortable situation as described below.

Neil is forever grateful to Barb for the sensitivity training that she gave him three decades ago in her milk house. "Well Doctor, what's causing the diarrhea and deaths in my calves?" she asked near the end of his investigation. Luckily, he maintained good eye contact when he said, "you're starving them." Fury erupted in her eyes and face and she came at him. The warnings gave him enough time to escape behind the bulk milk tank and he kept a good half-lap lead during the chase. With each revolution, he heard about exorbitant expenses for lab testing, drugs and vet bills; her compliance with recommendations for feeding, treatments, and sanitation; and the many hours spent nursing calves day and night. His insensitive head-on comment was her breaking point. The chase ended with Barb and Neil faced off on opposite sides of the tank.

Neil apologized. In return, she agreed to a feeding trial, essentially feeding more milk to every other newborn calf. He checked on progress during the next few weeks and months and learned about the successful feeding scheme that Barb put in place for all her calves. That Christmas, he opened her card and read her warm note of thanks. He kept it as a reminder to never again approach a management related herd health problem head on.

Changing human behaviour is one of the larger challenges a veterinarian faces in food animal practice. Practitioners who are successful in changing client behaviour have developed techniques over their careers to assist their clients in exploring alternative management practices without causing offense. The initial implication that management may be a contributing factor to a herd health problem can be expected to generate resistance, sometimes bordering on hostility, and anger from the stock people involved. Massaging this initial resistance into a willingness to explore alternatives is the crucial first step in resolving a management-related herd health problem. Methods for facilitating this transition will vary from situation to situation and from client to client.

Approaches to changing client behaviour, used successfully in the past, will be addressed in Part 2 of this series.

A Commentary on Respiratory and Gastro-intestinal Disease in Newborn Calves

(refers to Ceptor Animal Health News, NOVEMBER 2013. P4)

Neil Anderson, Cheltenham, ON

Follow-up to November 2013 Ceptor article "Herd Health"
A tendency to defend existing practices is a common human trait. In the case presented by Dr. Anderson, the owner championed his management practices by stating "I take very good care of my newborn calves; I've tubed colostrum into hundreds of them with no problems. I'm good at it. So is my staff. That's not the problem." The owner's argument was that the use of the esophageal feeder is good for calf well-being and for efficient use of farm labour (time). He firmly rebuffed the notion that tube feeding could cause harm.

What should a practitioner do? Post mortem (PM) examinations at the Animal Health Laboratory (University of Guelph) could provide clarity through a third party interpretation of the findings. Although the owner was not receptive to the idea or the

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expense of necropsies performed at the Animal Health Laboratory, the herd veterinarian submitted two calves for examination and was prepared to pay the bill in case, as the owner expected, the examinations were of no benefit. The pathological diagnoses and pathologist's comments (*pathologists comments in italics)* included rumenitis (*possibly associated with dysbacteriosis or sour rumen*), abomasitis, abomasal dilation and abomasal ulcers (*possibly associated with feeding protocols and overdilation*), and aspiration pneumonia *(foreign matter in the airways).* The pathologist's suggestions of predisposing causes for the lesions were key to changing the owner's outlook on the calf mortality and instituting changes in farm management.

Scrapie Diagnosed in an Ontario Dairy Goat Herd

Submitted by Jocelyn Jansen, OMAF/MRA, Elora, on behalf of the herd practitioner

In 2013 a herd of approximately 250 milking Saanen and Alpine goats was diagnosed with typical Scrapie. The goats showed neurologic signs that started with head twitching or shaking, followed by more generalized muscle fasciculations. The does developed a hypermetric gait, became hyperesthetic and progressively weaker until they could no longer stand. The body condition score of the affected animals deteriorated rapidly to a score of 1 out of 5 at the time of death or humane euthanasia.

From ELISA testing of an obex submitted to the Animal Health Laboratory, a presumptive diagnosis of Scrapie was made. The diagnosis was confirmed at a federal laboratory by immunohistochemistry and Western Blot test. The entire herd was put under quarantine by the Canadian Food Inspection Agency (CFIA). Marketing of milk from the herd ceased and shortly after this decision, the entire herd was euthanized by the CFIA and the herd veterinarian. There is no known link between scrapie and human health. Unlike sheep, there is no known genetic marker for susceptibility to scrapie in goats thus all goats on the farm had to be euthanized. Following euthanasia all specified risk materials were removed and the carcasses were sent for rendering.

Prior to this case, only two other cases of Scrapie had been diagnosed in goats in Canada (1976 and 2007). Both were associated with scrapie-infected sheep flocks or premises. Because of the unique nature of this case, at the time of euthanasia a variety of samples were collected from all goats over twelve months of age. These samples will be used to expand the current knowledge of scrapie in goats. Blood samples were collected in hopes that a genetic marker for susceptibility will be found.

This case presented several challenges, the most notable ones being the identification of the source of the infection and the tracing of goats that had left the farm. Scrapie may have entered the herd during expansion in 2009 when many goats were purchased from across Ontario. It is possible that one of these goats had acquired the infection from sheep, but it is likely that the exact source of the infection will never be found. Goats were both sold and acquired with little recording of purchasers or destinations. As there is no national identification program for goats, accurately tracing goats in and out of this farm has proved to be difficult.

The practitioner involved with this case sincerely hopes that this case heightens awareness in veterinarians and goat producers to the possibility of scrapie in goat herds and highlights the need for a national identification system for goats in Canada.

Cache Valley Virus: A Differential Diagnosis for Lamb Malformation and Pregnancy Loss in Sheep

Jocelyn Jansen, Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON

Cache Valley virus (CVV) is an arbovirus in the family Bunyaviridae. CVV is considered endemic in most parts of the United States, Mexico and Canada and infects a wide range of domestic and wild animals, as well as humans. Clinical disease is most often reported in sheep. The virus is spread by several species of mosquitos.

In sheep, the majority of infections are subclinical. However, if infection occurs during the first trimester of pregnancy, the virus may cross the placenta and result in a variety of pathologies. If infection occurs during the first 28 days of gestation, embryos usually die and are resorbed. Infection between 28 and 48 days of gestation often results in fetal malformation. CVV may cause occasional abortions in sheep, though the most common clinical presentations are stillborn lambs and the birth of live lambs with congenital defects affecting the central nervous and musculoskeletal systems. Malformations include hydranencephaly, cerebellar and muscular hypoplasia, torticollis, scoliosis and arthrogryposis. Ewes tend not to show signs of disease. If infection occurs after 48 days of pregnancy, there are usually no adverse effects. CVV has been suspected when malformed lamb are born in Ontario. CVV was confirmed in laboratory testing in flocks in 2011, 2012 and 2013. In Ontario, adverse lambing events caused by CVV are most commonly seen late fall/early.

Diagnosing CVV as the cause of lamb malformations or pregnancy loss is difficult because the infection occurs months before the lambs are born. Diagnosis involves the demonstration of precolostral or fetal serum antibodies to the virus or CVV RNA in fetal tissues by RT-PCR. Maternal antibodies taken at parturition will simply indicate that infection has occurred previously, though absence of a titre rules out CVV as a diagnosis. Samples should be sent to the Animal Health Laboratory in Guelph. Animals that have been exposed to the virus may have lifelong immunity which should be protective for subsequent lambings.

Figure 1: Fetal malformation due to Cache Valley Virus

Photo courtesy of Dr. John M. King's Necropsy Show and Tell, hosted on the website of the College of Veterinary Medicine, Cornell University

However, infection with CVV does not protect against infection from other bunyaviruses. Research into the seroprevalence of CVV in the Canadian sheep flock is ongoing.

There are no vaccines available to protect sheep against CVV. Preventive measures that reduce exposure to mosquitos and breeding ewes outside of the mosquito season may help decrease fetal infections, but they are often difficult to implement.

de la Concha-Bermejillo A. Cache Valley virus is a cause of fetal malformation and pregnancy loss in sheep. Small Ruminant Research, 49: 1-9, 2003.

Shapiro A, Brooks A, Menzies P, Rau J, Drebot M, Andonova M, Zhang Z, Alexandersen S and Carman S. Cache Valley virus identified as a cause of malformed lambs in Ontario. AHL Newsletter, 16(2):15, 2012.

Slat gap covers: One Option for Creating Solid Flooring from Slats

Kathy Zurbrigg, Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON
Dr. Yolande Seddon, Prairie Swine Centre, Saskatchewan

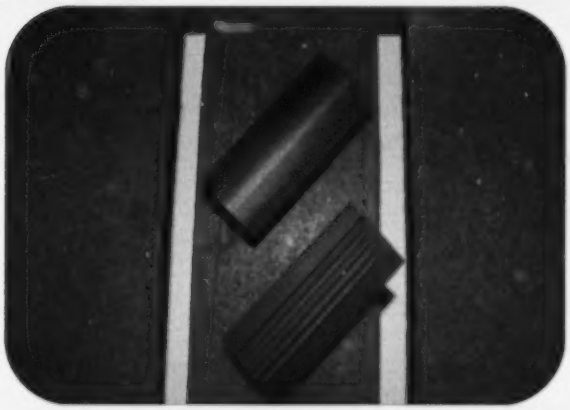

Figure 1: Smooth and ridged cap profiles

The saying "necessity is the mother of invention", is particularly true in the swine world which over the past 7 years has faced global economic hardship while simultaneously dealing with the pressure to make significant changes to housing and management practices. In the European Union and in some humane niche marketing programs, producers are required to increase the solid to slatted floor ratios beyond current industry standards. This requires producers to fill in slotted areas in an existing slatted floor. The usual method is to pour a layer of cement over the area but this is costly, labour intensive and can lead to structural headaches such as the need to raise pen gates and feeders to accommodate the new floor height. An efficient, easy way to convert a slatted floor to a solid floor is a gap that needs to be filled……pun intended.

Figure 2. Slat gap filler inserted into cement slat (middle)

Two different companies in Denmark have created a slat gap filler which is inserted into the slots of existing cement slatted flooring. The gap fillers come in 4 metre lengths and two widths that fit openings between 18-22mm and 14-16mm. The gap fillers do not require hardware or specialized equipment for installation, just a rubber mallet and some elbow grease. They are made of a durable plastic and the cap or visible portion of the gap filler can be a smooth or grooved profile (figure 1). The cap design prevents the filler from falling through the slats and the grip portion prevents the filler from being pulled back out of the gap by the pigs (figure 2). Researchers

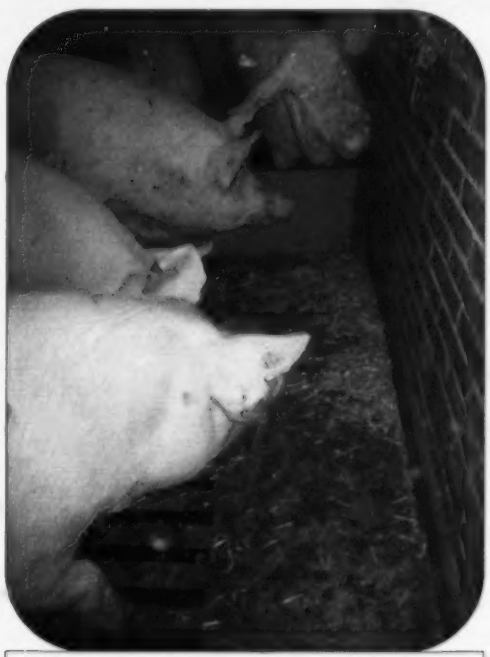

Figure 3. Slat gap filler in use at the Danish Research Centre.

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at the Danish Pig Centre have been testing two kinds of the gap fillers in their facility over the past year and say they have had no problems with durability nor with the gap fillers coming loose from the slot, despite being used in loose housing areas for sows (figure 3).

In March 2014 the National Farm Animal Care Council released the new Codes of Practice for the Care and Handling of Pigs. One major change from the previous version of the code is the requirement that after July 2014 all new construction, renovated or newly brought into use sow gestation barns must use a group housing system. The slat gap fillers may be one option for assisting producers who wish to convert space in an existing stalled barn to group gestation with a solid floor for resting and eating. In addition, the gap fillers could be used around grower/finisher feeders to prevent feed wastage or to improve the foot health for young growers by decreasing the number of slots in the floor in high traffic areas.

There is currently no North American retailer for the product but it can be ordered directly from the Danish companies. Websites with contact information for two companies are below. Approximate cost is $7.20 CAN per linear metre plus shipping.

Hyldgaard Trading- Harly Hyldgaard Email:
hylle@privat.tele.dk
www.hyldgaard-trading.dk

BJD-Stavnagervej 33, 6760 Ribe, Denmark,
Telephone.: +45 75 10 11 25
Email: info@bjd.dk
www.bjd.dk/slap-gap-cover

Mastitis Test Changes - M3 become M4

Ann Godkin, Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON
David Kelton, Dept of Population Medicine, OVC, University of Guelph, Guelph, ON

As of November 2013, CanWest DHI has added detection of Prototheca DNA to their Mastitis PCR test. The M3 is now M4. The cost remains unchanged.

Between Dec 1st 2013 and Feb 28th 2014, M4 tests were requested and conducted on 3786 test day cow samples from 502 herds in all five provinces serviced by CWDHI. The results are in table 1.

Herd owners select subsets of their herd to be tested with M4. Rarely are whole herds tested. In the first 90 days of testing with M4, 63 herds had at least one cow sample test positive for Prototheca with 23 herds having multiple positive tests. Of the 120 positive cow samples, 119 had a somatic cell count (SCC) measurement recorded on the same test. Among the cow samples positive for Prototheca, 9% had a SCC less than 150, 14% had SCCs of 151 to 400, and 77% had SCCs over 400.

Seven Ontario herds with positive results for Prototheca, had quarter samples collected from 20 cows by collaborating veterinary practitioners for bacteriological culture at the AHL. The results are in Table 2. Of the 10 cows with a 1+ (low) score on the M4 for Prototheca, 8 were negative on culture and 2 were positive. Of the 10 cows with a 2+ (high) score, 1 was negative on culture and 9 were positive. All 20 cows (both low and high), had SCCs over 200 x 10^3 cells per ml on the same test day.

Table 1: Positive M4 results on 3786 samples, Dec 1 2013 to Feb 28, 2014.

	Staphylococcus aureus	*Streptococcus agalactiae*	*Mycoplasma bovis*	Prototheca sp.
Samples positive (#/%)	743/ 19.6%	2/0.05%	7/0.18%	120/3.2%

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Table 2: PCR and bacteriological culture results for quarter samples from 20 cows

	Culture results - Number of quarters positive per cow				Total Cows
PCR Result	0 pos	1 pos	2 pos	3 pos	
1+ (low)	8	2	0	0	10
2+ (high)	1	3	4	2	10
Total	9	5	4	2	20

Conclusions from testing:

1. Cows with a high M4 score are more likely to be positive on culture for Prototheca mastitis, and according to the results of our small study, may be infected in multiple quarters.
2. Cows with a low M4 score may or may not be culture positive. They require further evaluation and monitoring.
3. Over 90% of the cows with Prototheca positive tests had elevated SCCs consistent with mastitis however, elevated SCCs were likely the reason cows were selected for testing. Therefore the results above give no information about SCCs among all Prototheca infected cows.

Recommendations:

Prototheca mastitis is an algal udder infection that has serious implications for both the cow and the herd. As the infection is refractory to therapy, infected quarters should be detected with a CMT and the quarters dried off. Infected cows should be milked last and not rebred. Prototheca resides in the udder of infected cows but also survives well in the dairy cow environment (in manure, slurry, bedding, and feed). As well as causing mastitis, Prototheca can also contaminate teat and udder skin.

Prototheca positive PCR milk tests may occur because a cow has mastitis (udder infection) and the organism is being shed from within the infected udder. The level of organism detected may be low in the early stages of infection. However, because the organism is common in the environment, it may also be possible for Prototheca DNA to contaminate the outer surfaces of the teat and be carried into a DHI test day sample at milking time, resulting in a low positive test.

Recent Danish work with *Staph aureus* showed that the number of low PCR positive tests was greatly reduced by better teat preparation prior to milking. The improved prep removed bacteria from teat skin surfaces and increased the likelihood that DNA detected in the DHI milk sample originated from mastitis infections and not from skin contamination via the milking process. This is something to keep in mind, especially on DHI test day.

Herds where cows are diagnosed with Prototheca mastitis should work closely with their herd veterinarian to develop a preventive strategy. A screening program for Prototheca mastitis should be implemented to ensure cases are diagnosed early and that an accumulation of chronically infected cows does not occur in the herd. Use of the M4 can facilitate the implementation of a routine screening program.

Take home points:

1. To get the best value from the M4 (or any mastitis test) producers should ensure teat skin is clean prior to sample collection.
2. First time positive cows for Prototheca on the M4, in a herd where Prototheca has not been diagnosed before, should be confirmed using a repeat M4 on subsequent tests or by culture. It is not known what proportion of M4 low positives will progress to more severe mastitis or when that will occur.
3. All additional udder health information available should be used to assist in the interpretation of M4 tests, including the cow's current and historical SCC, history of clinical mastitis and CMT results.
4. All M4 positive cows (for any of the 4 mastitis pathogens) should be milked last until removal is justified or the case resolves to prevent further spread.

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5. Cows with Prototheca mastitis should be monitored for infection spread within the cow using the CMT paddle and milking of positive quarters should be stopped.

6. Cases of Prototheca mastitis are more likely in herds where previous diagnoses have occurred.

Upcoming Federal Disease Program Transitions

Changes to the federal programs for Rabies and Anaplasmosis are scheduled to take effect on April 1, 2014.

Maureen Anderson, Veterinary Science and Policy Unit, OMAF/MRA, Guelph, ON

Rabies

As of April 1st 2014, the CFIA will no longer be conducting rabies response activities, including investigation, sampling, and all post-exposure management.

Rabies remains a federally reportable disease in Canada. This means that suspected and confirmed cases of rabies will still be tracked by the CFIA for monitoring purposes, via their laboratory submission process. The CFIA will continue to perform laboratory testing on human samples and samples from rabies -suspect animals that may have exposed domestic animals and/or humans to the virus.

In Ontario, staff from the Ministry of Health and Long-Term Care (MOHLTC), with the support of staff from the Ontario Ministry of Agriculture and Food (OMAF), are designing a system that will enable suitable response including investigation, sampling, and post-exposure management for situations involving potential rabies exposure of humans and domestic animals (pets and livestock). Details of this new system continue to evolve.

Progress to date: If there is any concern about human exposure to rabies, individuals should always call their local public health unit first. Public health personnel will perform the human risk assessment and take appropriate action based on this (e.g. arranging for post-exposure prophylaxis or the people involved, and/or sampling and testing of the suspicious animal, if possible (be it a neurological domestic animal, or a suspicious wild animal, including bats)).

If there is clearly no risk of human exposure, but there is concern about exposure of a domestic animal (including pets and livestock), individuals should call the Agricultural Information Contact Centre (AICC) at 1-877-424-1300. They will then be directed to an OMAF veterinarian, who will work with the local veterinarian and animal owner to perform the risk assessment for the domestic animal. If testing of the suspicious animal is warranted, local veterinary staff will be asked to assist with sample collection and submission, the costs of which will be covered by OMAF. Provincial staff will work with local veterinary staff through the entire process.

Concerns about suspicious wildlife that have not had direct contact with people or domestic animals should continue to be directed to the Ministry of Natural Resources, which will continue to manage the rabies control program in Ontario with regard to wildlife.

During the transition phase of this process, local CFIA district offices will have all of the necessary contact numbers and will be able to direct individuals appropriately should they call there.

Anaplasmosis

This disease will be changed from reportable to immediately notifiable at the federal level, and will remain immediately notifiable at the provincial level in Ontario; however, as of April 1, 2014 the federal response program will be discontinued.

Similarly, changes are planned for the federal control program for **chronic wasting disease (CWD),** and changes to the federal **anthrax** program have already been in effect since April 2013. For more information, follow these links to notices posted on the CFIA website:

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Rabies and CWD: http://bit.ly/MQue5Q
Anaplasmosis: http://bit.ly/1nhJ9Dv
Anthrax: http://bit.ly/1fukkCm

OMAF will continue to work with the federal government and provincial and national stakeholders to help the agricultural industry manage these diseases in order to safeguard animal and human health. Specific details regarding provincial plans for the rabies and anaplasmosis programs for after April 1 will be communicated to Ontario residents and the veterinary community as soon as they are finalized.

Porcine Epidemic Diarrhea In Ontario

Tim Pasma and Cathy Furness, Veterinary Science and Policy Unit, OMAF/MRA, Guelph, ON

Since January of 2014, cases of porcine epidemic diarrhea (PED) have been diagnosed on swine farms in Ontario. In addition, swine delta coronavirus (SDCV) has also been recently confirmed on several farms. These diseases cause diarrhea, vomiting and anorexia and are fatal in young piglets.

Veterinarians and veterinary laboratories in Ontario are required to report diagnoses of PED and SDCV under the Animal Health Act as they are considered emerging pathogens. Staff in the Veterinary Science and Policy Unit have been following up on cases with epidemiological investigations to follow the progression and clinical presentation of the disease. An extensive surveillance program involving transporters and processors handling approximately 85% of the hogs marketed in Ontario was created to help determine the distribution of the virus across Ontario.

Our work to date has shown that the disease is not widespread across Ontario. Approximately 5% of 871 trailers tested have been positive for the PED virus. Positive trailer results could occur as a result of cross-contamination, hogs from already known positive farms, and other unconfirmed farms with PED infections. Trace backs were conducted on positive trailers and no positive farms were identified.

The epidemiological investigations have identified 2 significant factors associated with cases: (1) breaks in farm biosecurity and (2) exposure to some feed ingredients of swine origin. Ongoing monitoring has shown that the incident rate remains low, contrary to what has been observed in the United States. This demonstrates the hard work that OMAF, private veterinarians, Ontario Pork and producers have done to date and shows that there is hope to keep the impact of PED at a low level in Ontario. Work by the CFIA, USDA, FDA and industry is ongoing to prevent contaminated feed ingredients from entering Canada and to improve the biosecurity of livestock trucks returning from the United States.

The disease has variable clinical presentations. In young piglets, the morbidity and mortality is nearly 100%. However, in older pigs the signs are milder or even negligible. Producers should be advised to be vigilant for cases of diarrhea and lab submissions for diarrhea should include PED and SDCV as a differential. Fecal swabs are the preferred sample to prevent environmental contamination. A triplex RT-PCR test for coronaviruses (PED, transmissible gastroenteritis virus and porcine respiratory coronavirus) as well as SDCV are available at the Animal Health Laboratory. Currently, OMAF will pay for testing of suspect cases of PED and SDCV as part of ongoing monitoring for the diseases.

Our follow up surveys of producers have shown that an aggressive feedback program is key to successfully managing the disease. The initial cases are farrowing healthy piglets.

OMAF has provided funding through Growing Forward 2 to help enhance biosecurity in response to PED. Ontario Pork has received $2 million to implement sustainable biosecurity initiatives. A special GF2 PED fund has been established and over 900 applications have been received to date for projects that will improve facility entry, better manage facility and traffic flow and enhance cleaning and disinfection.

More information and resources for PED and SDCV can be found at www.ontario.ca/swine

Florfenicol in Milk – Longer Than You Think?

Ann Godkin , Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON

Florfenicol is available in two product formulations, Nuflor and Resflor (in combination with flunixin meglumine) both from Merck. Nuflor is labelled for use in non-lactating cattle less than 20 months of age for the treatment of respiratory disease, footrot and pinkeye. Label directions are 40 mg/kg bwt by single subcutaneous (SC) treatment or two treatments intramuscularly (IM) at a lower dose of 20mg/kg. Nuflor labelled withholding time before slaughter is 55 days following SC use and 36 days for IM use when used according to label. Resflor is for use in respiratory disease only, also for non-lactating cattle under 20 months of age. Label treatment is for SC use in the neck once at 40 mg/kg. Resflor labelled withhold time before slaughter is 60 days. As there are no products containing florfenicol labelled for use in lactating dairy cattle the "allowable level" or maximum residue level (MRL) in milk in Canada and the United States is zero.

Recently in an "on-farm experiment" a producer used Nuflor for treatment of a lactating dairy cow according to the label directions, administrating two treatments intramuscularly 48 hours apart. Starting on the first day of treatment he tested the milk using the Delvo P test. On day 1, the results were negative, however, on day 3 the Delvo P was positive. The Delvo P test has a reported detection limit of 500 ppb meaning that cattle with milk levels of florfenicol lower than 500 ppb would have negative test results on the Delvo P yet would still have violative levels in the milk. Subsequently the producer contacted his vet for advice. At the suggestion of the veterinarian the cow was sampled daily until she tested negatively on both the Delvo P and the Charm II test (receptor assay) at the Agriculture and Food Laboratory(AFL), University of Guelph. The Charm II (CAP) test has a reported detection rate of 1 ppb for chloramphenicol and 40 ppb for florfenicol (Charm II (CAP) test brochure http://www.charm.com/en/products/charm-ii/charm-ii-amphenicols/charm-ii-amphenicols-learn-more.html).

The Delvo P test was negative until the day of the second treatment (i.e. the test gave negative results despite known antibiotic therapy), and was only positive for two further days-- the day of the 2nd treatment and the day following. The Charm II (CAP) tests at the AFL were positive for 28 days following initial therapy.

Only a single cow was followed and individual variation may have contributed to the long duration of positive tests for this cow, however, the experiment is worth noting as the residue persisted for longer than the milk withhold times of 5 and 8 days that have been suggested anecdotally as appropriate. The only rapid, semi-quantitative test for florfenicol in milk, with a useful detection level, is the Charm II Amphenicol (CAP) test. This test is not currently for use in the field. In Ontario milk samples can be tested, fee for service, by contacting the AFL, Guelph (http://www.guelphlabservices.com/AFL/raw.aspx).

Veterinary products can only be used in an extra-label manner under the direct supervision of a licensed veterinarian. Veterinarians should use great caution when prescribing the use of products containing florfenicol in lactating cows or in any dairy animals over the age of 20 months. (Note that dry dairy cows are considered as "lactating cows" for labelling purposes). Extra-label use likely requires very long withholding times. It may be that milk withholding times are highly variable depending on absorption. If florfenicol-containing products are used, cows should be tested with the Charm II (CAP) to ensure drug residues are not present in milk. OMAF screening of bulk tank milk has revealed that florfenicol residues do occur, suggesting inappropriate withholding times are being used currently.

Anaplasmosis in Ontario – New Level of Risk

Ann Godkin , Veterinary Science and Policy Unit, OMAF/MRA, Elora, ON

Last July, Anaplasmosis was suspected by a clinical pathologist at the Animal Health Laboratory (AHL) on examination of a blood smear from a dairy cow in Eastern Ontario. For laboratory details see the AHL Labnote Sept 2013. Subsequently, as Anaplasmosis was a federally reportable disease, confirmation, follow-up testing, quarantine and removal of infected cattle was conducted by CFIA throughout the fall and winter. Herd owners who received cattle from the case herd received letters from CFIA warning them of the increased risk to their herds and the need to discuss testing with their herd veterinarians. It is believed that Anaplasmosis entered the Ontario case herd via the purchase of a carrier or acutely infected animal from the United States, where in many areas, Anaplasmosis is an endemic infection. A recent article in a veterinary magazine described a similar case in New York State in 2010. Veterinarians interviewed commented that the wide movement of cattle likely has greatly expanded the extent of Anaplasmosis infected herds, so that infected herds are no longer limited to the south and western regions of the US. http://www.bovinevetonline.com/bv-magazine/case-study-anaplasmosis-in-a-new-york-dairy-cow-113982009.html

In Canada, as of April 1st 2014 Anaplasmosis has been removed from the federally reportable disease list and moved to the immediately notifiable list. This ends CFIA's direct involvement with cases that occur although they will continue to record laboratory results for OIE reporting purposes. This also ends federally mandated, cattle import testing requirements for Anaplasmosis. In Ontario Anaplasmosis continues to be an immediately notifiable disease under the provincial Animal Health Act, meaning positive laboratory tests must be reported to the Ontario Ministry of Agriculture and Food. Testing using a cELISA for Anaplasma is available through the Animal Health Laboratory in Guelph.

While many have considered Anaplasmosis to be restricted geographically and to have some relationship to the occurrence of insect vectors such as ticks and biting flies, it is likely that these risk factors are not the only ones of importance here in Canada. The occurrence of cases in Ontario (1996 & 2013), Manitoba (Fall 2013) and New York (2010) illustrate the change in geographical risk. The wide and rapid dissemination of infection within affected dairy herds suggests that in these situations there is little dependency on an insect vector. Indeed the New York case highlights the repeated use of injections with common needles as the most likely mode of transfer. Ear taggers may also be important in infection transfer.

In the New York case the frequent injection of oxytocin using a common needle was highlighted. This is considered a particularly high risk practice as using a single needle per multiple cows can readily introduce infected erythrocytes directly into the blood stream resulting in the rapid spread of Anaplasmosis in the herd. Ontario veterinarians should discuss this newly recognized threat to cattle health with their beef and dairy clients. Some immediate actions are needed.

- The use of one needle for the injection of more than one animal should cease.
- Testing programs for both domestic and imported cattle should be implemented according to the herd situation.
    - The risks associated with buying cattle from other herds, sourced domestically and internationally, are greater than ever before. Herd owners need a plan to mitigate the risk of disease introduction new animals can bring.
    - Herd owners using reproduction programs that involve moving cattle to and from reproduction centres should review their own health programs, request information regarding the disease prevention programs in place at the centres and implement isolation and testing for Anaplasmosis for returning cattle before commingling them with the home herd.
    - Show season approaches. The handling of cattle going on and off the farm and commingled with other cattle from a variety of sources requires special planning.

(Continued on page 13)

- The time from infection to ELISA positive test results for Anaplasmosis is reported to be from 3 to 8 weeks, strongly suggesting that a single negative test may not be sufficient to diagnose potential infection in recently infected, newly introduced cattle. Cattle should be retested once a full incubation period has elapsed. CFIA has used two tests 35 days apart.

Two things have happened here in Canada – the disease prevention program run by the federal government has ended and several provinces have concurrently experienced new cases of Anaplasmosis. Veterinarians and herd owners need to become informed, recognize the new level of risk and take actions to prevent further spread of Anaplasmosis, both now and in the future.

University of Guelph Team First Place at the National Dairy Challenge Contest

FORT WAYNE, Ind., April 8, 2014 – Optimism for the dairy industry's future filled the convention center in Fort Wayne, Ind., where 264 university students congregated to improve skills, network, and learn about careers and innovation. The North American Intercollegiate Dairy Challenge® (NAIDC) allows dairy students to apply theory and learning on a real-world dairy farm while working as part of a team.

The 2014 contest included 32 universities, each with four students on their university team competing for awards.

After 3 days of investigation and presentations, Ontario's University of Guelph came home with a first place finish. Congratulations to team members and coaches!

One of four first-place teams at 2014 NAIDC University of Guelph
Front row (L-R): Alan Nanne, Hans Van Lith; Back row (L-R): Coach John Welton, Coach Mark Carson, John Wynands, Peter Spruit, Coach Ken Leslie

Get Trained in Trainer Evaluation

One of the recommendations of the Dairy Code of Care, section 3.14, is regarding the correct placement of electric cow trainers for tie-stall dairy barns. The code specifies the following requirements:

REQUIREMENTS
Energizers for electric trainers must not exceed 2500 volts.
Electric trainers must have a height adjustment.
Electric trainers must be located over the chine when the cow is standing with her hindfeet near the gutter curb.

Producers and veterinarians may be unaware of these specifications and may not have done an assessment of trainer placement recently. Doing an evaluation now could be timely preparation for future Animal Care Assessments, and result in cleaner cows and better heat detection. Dr. Neil Anderson has designed a protocol and recording form to provide a step wise method for evaluating trainer position and action. Please contact mary.vandenborre@ontario.ca to obtain a copy. The information will be posted on the OABP website shortly (www.oabp.ca).

Horse Report—Spring 2014

The latest issue of the Horse Report, "Optimizing the care and management of your equine athlete" is now available on the Center for Equine Health's web site *http://www.vetmed.ucdavis.edu/ceh/current.cfm*

You may view the newsletter in its PDF format or as an interactive Zmag format.

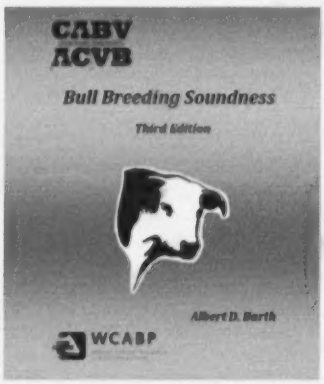
Don't forget you can always view our previous issues, such as "Caring for Horses Through Life and Death", "Transporting Horses by Road and Air: Recommendations for Reducing the Stress", "The Equine Heart: Power Plant Unequaled", "The Miniature Horse: More Than Just a Smaller Horse!, "Diagnosing and Treating Gastric Ulcers in Horses", "Nutrition for Rehabilitating the Starved Horse" or "Equine Fractures: Improving the Chances for a Successful Outcome" by going to *http://www.vetmed.ucdavis.edu/ceh/previous.cfm*

Code of Practice for the Care and Handling of Beef Cattle

The Canadian Pork Council (CPC) and the National Farm Animal Care Council (NFACC) are pleased to announce the release of the new *Code of Practice for the Care and Handling of Pigs*. The Code is available electronically at *www.nfacc.ca/codes-of-practice/pigs*.

The Code's development was led by a 17-person Code committee comprised of pig producers, animal welfare and enforcement representatives, researchers, transporters, processors, veterinarians and government representatives. Aiding in their work was a six-person Scientific Committee that included research and veterinary expertise in pig behaviour, health and welfare.

CABV/ACVB Bull Breeding Soundness, Third Edition



The **3rd Edition of the Bull Breeding Soundness Manual**, written by **Dr. Albert D. Barth**, is now available through the WCABP office.

Copies of this publication may be purchased from:
Western Canadian Association of Bovine Practitioners (WCABP)
2nd Floor—226E Wheeler Str. Saskatoon, Saskatchewan S7P 0A9
Telephone: 1-866-269-8387; E-mail: info@wcabp.com

www.wcabp.com/about-us/bull-breeding-soundness-evaluation-manual

Continuing Education/Coming Events

May 7-9, 2014	6th European Symposium on Porcine Health Management (ESPHM), Hotel Hilton Sorrento Palace, Sorrento, Italy. *www.esphm2014.org*
May 20-22, 2014	2014 Minnesota Dairy Health Conference, Doubletree Hilton Hotel, Minneapolis, US *www.cvm.umn.edu/vetmedce/events/MinnesotaDairyHealth/dairy/home.html*
May 27-30, 2014	27th American Dairy Science Association Discover Conference—Strategies for Improving US Dairy Cattle Welfare, Eaglewood Resort and Spa, Itasca, Illinios US *www.adsa.org/Meetings/DiscoverConferences/27thDiscoverConference.aspx*
June 2-5, 2014	Dairy Management Program Shortcourse, Advanced Dairy Nutrition, Cornell University, Ithaca, NY *www.ansci.cornell.edu/dm/adn_course/index.html*
June 3-6, 2014	Dairy Health Management Certification Program Update Meeting, Production, Health and Practice Economics, OVC, Guelph, ON contact: sleblanc@uoguelph.ca
June 4-6, 2014	World Pork Expo, Iowa State Fairgrounds, Des Moines, Iowa *www.worldpork.org*
June 8-11, 2014	23rd International Pig Veterinary Society Congress, Moon Palace Golf & Spa Resort, Cancun, Mexico. *www.ipvs2014.org*
June 18-19, 2014	Ontario Pork Congress, Stratford Rotary Complex, Stratford, Ontario *www.porkcongress.on.ca*
July 9-12, 2014	Canadian Veterinary Medical Association Convention, Delta Hotel and Conference Centre, St. John's Newfoundland and Labrador. *www.canadianveterinarians.net*
July 16-18, 2014	4th International Symposium on Beef Cattle Welfare, Iowa State University, Ames, Iowa *www.extension.iastate.edu/registration/events/conferences/beefwelfare/index1.html*
July 20-24, 2014	American Dairy Science Association® (ADSA®), the American Society of Animal Science (ASAS), and the Canadian Society of Animal Science (CSAS) Joint Meeting, Kansas City, Missouri, US *asas.org/meetings/jam2014/home*
July 26-29, 2014	AASRP Small Ruminant CE Program, 2014 AVMA Conference, Colorado Convention Centre, Denver, Colorado US *www.aasrp.org/cde.cfm?event=421530*
July 27-Aug 1, 2014	XXVIII World Buiatrics Congress, Cairns, Australia *wbc2014.com*
July 30-31, 2014	Bovine Respiratory Disease Symposium (BRDS) 2014: New Approaches to Bovine Respiratory Disease Prevention, Management and Diagnosis, Renaissance Denver Hotel in Denver, Colorado, US, in conjunction with the 2014 Summer Academy of Veterinary Consultants (AVC), July 31st - August 2nd, 2014. *www.brdsymposium.org*
August 4, 5 & 6, 2014	National Mastitis Council Regional Meeting 2014 , Ghent University (AULA) , Ghent, Belgium *www.nmc2014.ugent.be/v1/home*
September 10-12, 2014	Canada's Outdoor Farm Show, Woodstock, ON *www.outdoorfarmshow.com*
September 18-20, 2014	47th Annual Conference of the American Association of Bovine Practitioners, meeting jointly with the American Association of Small Ruminant Practitioners, Albuquerque, New Mexico. *www.aabp.org*
November 13-14, 2014	DCRC Annual Meeting, Hilton Salt Lake City Centre, Salt Lake City, Utah, US *www.dcrcouncil.org/meetings.aspx*

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Comments: .....

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Ontario

Ministry of Agriculture and Food
Ministry of Rural Affairs

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